ADJUSTMENTS TO UNITS OF VALUE

Units of Value. For appraisal purposes, land valuation is often performed using those comparative unit values, expressed in dollars per unit, which are typically used in the local real estate market. Examples of these unit values are front foot, square foot, acre, site, and units buildable. Commercial and industrial land is often valued using front foot, square foot, or acre unit value. Residential land is usually valued using site, square foot, or acre unit value. Agricultural land is valued on an acre unit of value. A units buildable unit value might be useful for property suitable for apartment or condominium development.

Adjustments to Units of Value. The geometric arrangement of many subdivisions creates problems in the use of typical land unit values to calculate the lot value, applying front foot, square foot, or acre unit values. For example, the application of the front foot unit value to the effective front footage of a particular lot may result in an unrealistic lot value if the market value for the lot is unaffected by the actual size and shape. If the depth, frontage, or shape is extreme enough to result in a substantially greater or lesser lot value than justified by the market price of the typical lot, there has to be an adjustment made to reflect the true market value. Lots with more frontage than is necessary for one residence, but with insufficient frontage to accommodate a second dwelling may fall into this category. Lots with irregular shapes or excess footage at the rear may also may create valuation problems if the value resulting from the application of typical unit values for land value calculations is significantly greater than the market value.

If the verified sales price for a lot indicates a reasonably uniform market value, regardless of size or shape, a site value would be more appropriate than the application of front foot, square foot, or acreage unit values.

Value Adjustments for Shape. Factors to be considered in the analysis of odd shaped lots and those lots with atypical street frontage or depth:

Lot shape and dimensions which are typical of the majority of the lots.

Indicated market value of individual lots.

The unit value as applied to the typical lot.

Necessary adjustments to be applied to lots which are not typical in size or shape, but which are selling in the same price range as the typical lot and which result in an appraised value outside the value range tolerance.

Odd shaped lots might include those that are triangular, trapezoidal, or irregular in shape. One type of size adjustment that may be required is depth adjustment, discussed in the section immediately following.

Depth Adjustments. Property which is appraised on a front foot unit basis normally will require the use of a depth factor table. Depth tables can be utilized to adjust front foot values for parcels with atypical depth. The depth factors shown on a depth table must be developed from the analysis of market data. A depth table is provided later in this appendix which provides hypothetical depth factors to be applied to the valuation of lots whose depths deviate from the typical depth in the local market. This hypothetical depth table can be adjusted for the typical depth existing in any market by following the procedures provided in this appendix under the subject, Depth Factor Conversion, immediately following the Depth Table.

Corner Lot Valuation. The market may exhibit increased value for corner lots, particularly for certain property uses. This influence is often seen in commercial properties such as service stations, retail stores, and convenience stores. It is less likely to apply to residential sites, but could in some communities. Commercial advantages of a corner are such things as easy entrance and exit, increased visibility, and exposure to more traffic. The effect on

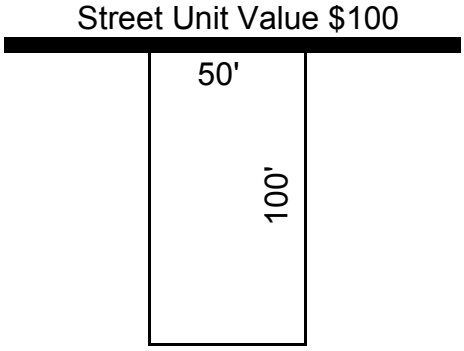
the value of the lot will increase or decrease as the amount of frontage on the two intersecting streets increases or decreases.

An appraiser must determine if the corner influence is a factor, and if so, the amount of influence. Percentage factors can be applied to a unit value to adjust the valuation for the corner influence. Any such percentage factors should be based on local market data. The appraiser can develop corner influence tables to provide factors which take into account the frontages applicable to the subject lot. Unless a local pattern of value influence is clearly demonstrated, corner influence should not be applied to residential properties.

LOT VALUATION USING FRONT FOOT UNITS OF VALUE

The following 12 examples present calculation methods applicable to the front foot unit valuation of lots with regular and irregular shapes and depths. All depth and corner influence factors used are hypothetical.

EXAMPLE 1 Rectangular Lot. - Front Foot Value with Depth Factor

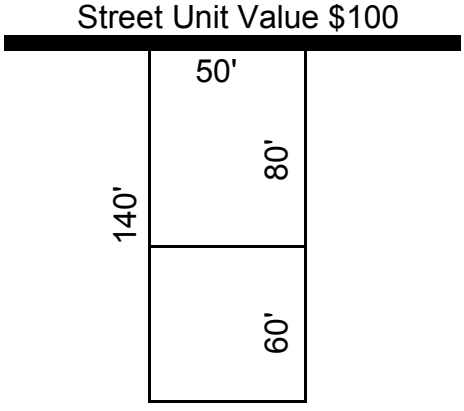


To find the value of a rectangular lot, multiply the unit front foot value by the depth factor. Multiply the resulting adjusted front foot value (rounded off to nearest dollar) by the lineal feet of frontage or width of the lot.

CALCULATION:

Lot Dimensions	Unit		Unit Value		Depth Factor		Lot Value
50' X 100'	50'	X	($100	X	1.00)	=	$5,000

EXAMPLE 2 Rear Rectangular Lot. - Front Foot Value with Depth Factor.



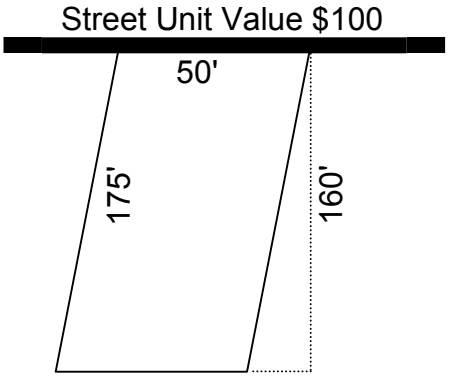
To find the value of a rear rectangular lot, multiply the unit front foot value by the difference between the depth factors for the farthest and nearest distances of the lot from the street. Multiply the resulting adjusted front foot value by frontage.

CALCULATION:

Lot Dimensions	Unit		Unit Value		Depth Factor		Lot Value
50' X 60'	50'	X	($100	X	0.21)	=	$1,050

Depth (140' - 80') Depth Factor (1.12 - 0.91) = 0.21

EXAMPLE 3 Parallelogram-Shaped Lot. (Oblique to the Street) - Front Foot Value with Depth Factor.

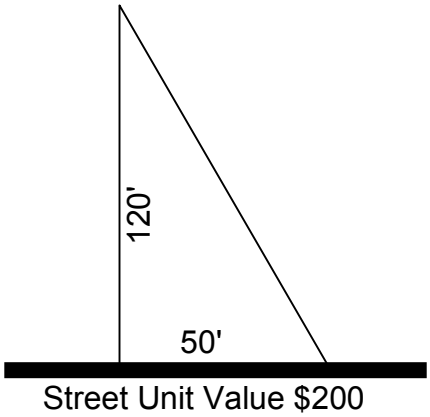


To find the value of the lot, multiply the unit front foot value by the depth factor for the perpendicular depth of the lot. Multiply this adjusted front foot value by the frontage.

CALCULATION:

Lot Dimensions	Unit		Unit Value		Depth Factor		Lot Value
50' X 160'	50'	X	($100	X	1.16)	=	$5,800

EXAMPLE 4 Triangular Lot with Base on Street - Front Foot Value with Depth Factor and Shape Factor (with base on the street at right angle to the street).

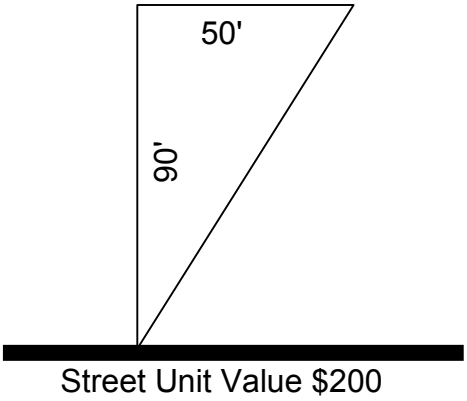


To find the value of the lot, first compute as a rectangle or parallelogram lot of identical frontage and parallelogram depth. Take 65% of the value of this lot for the value of the triangle lot with base on the street at right angles to the street.

CALCULATION:

Lot Dimensions	Unit		Unit Value		Depth Factor		Triangle Factor		Lot Value
50' X 120'	50'	X	($200	X	1.06	X	0.65)	=	$6,890

EXAMPLE 5 Triangular Lot with Apex on Street - Front Foot Value with Depth Factor and Shape Factor (with apex on the street at right angle to the street).

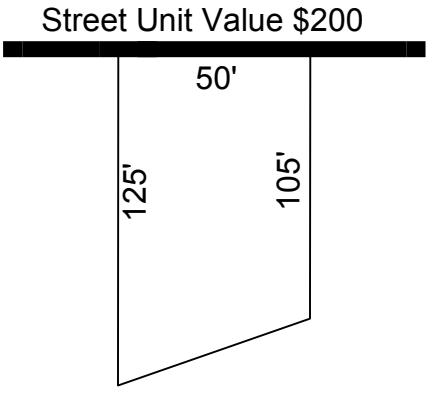


To find the value of the lot, first compute as a rectangular or parallelogram lot with frontage and perpendicular depth identical to the base and depth of the triangular lot. Take 35% of the value of this lot for the value of the triangular lot with the apex on the street and at right angles to the street.

CALCULATION:

Lot Dimensions	Unit		Unit Value		Depth Factor		Triangle Factor		Lot Value
50' X 90'	50'	X	($200	X	0.96	X	0.35)	=	$3,360

EXAMPLE 6 Trapezoidal Lot with Base on Street. - Front Foot Value with Depth Factor.

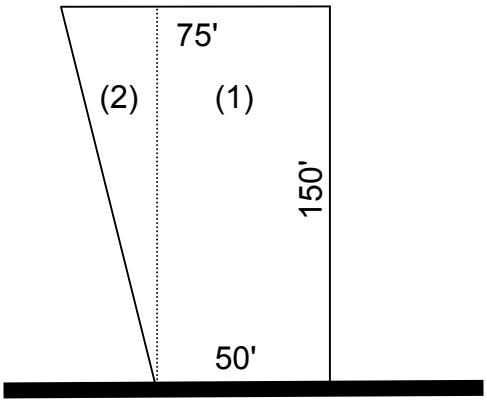


To find the value of a trapezoidal lot at right angles to the street, multiply the unit front foot value by the depth factor for the average depth of the parallel sides of the lot. Multiply this adjusted front foot value by the frontage.

CALCULATION:

Lot Dimensions	Unit		Unit Value		Depth Factor		Lot Value
50' X 115' (average)	50'	X	($200	X	1.04)	=	$10,400

EXAMPLE 7 Trapezoidal Lot with base on Street. - Front Foot Value with Depth Factor and Triangle Factor.



Street Unit Value $200

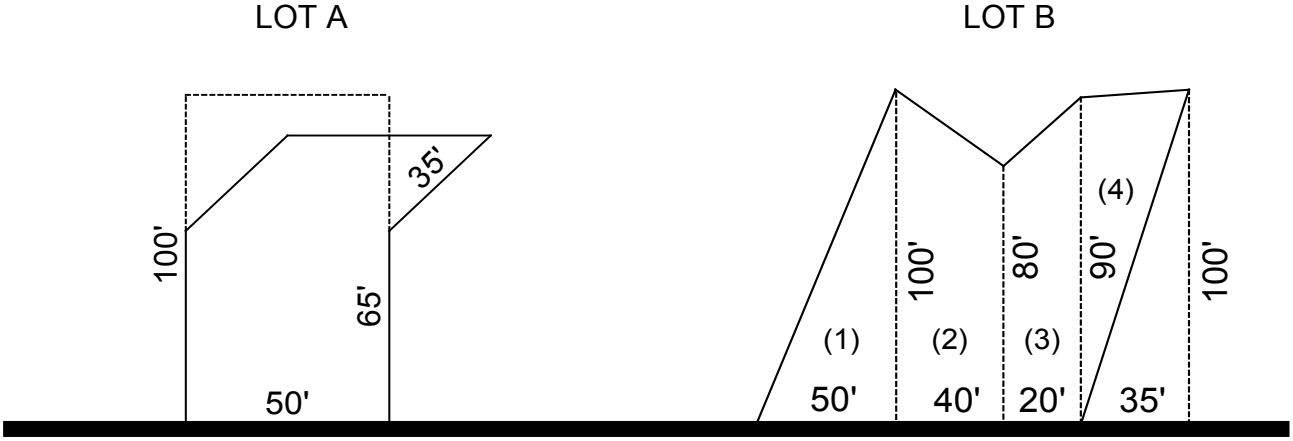
To find the value of the lot, compute the rectangular portions separately, according to rule, and take the sum of the two computations for the total value.

CALCULATION:

Lot Dimensions	Unit		Unit Value		Depth Factor		Triangle Factor		Lot Value
(1) 50' X 150'	50'		($200	X	1.14		NA)	=	$11,400
(2) 25' X 150'	25'	X	($200	X	1.14	X	0.35)	=	$ 2,000
					TOTAL LAND VALUE:				$13,400

EXAMPLE 8 Irregular Lot with base on Street. - Front Foot Value with Depth Factor and Shape Factors.

Reduce the irregular lot to the nearest equivalent rectangular, trapezoidal or triangular sections and apply the applicable rules.



Street Unit Value $200

EXAMPLE 8 Irregular Lot with Base on Street. (continued) - Front Foot Value with Depth Factor and Shape Factors.

CALCULATIONS:

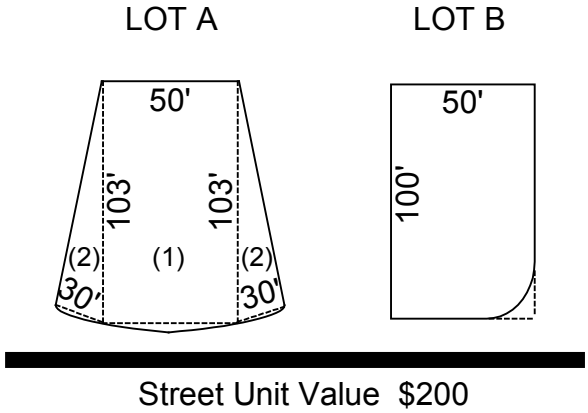
LOT A

Lot Dimensions	Unit		Unit Value		Depth Factor		Triangle Factor		Lot Value
50' X 100'	50'	X	($200	X	1.00		NA)	=	$10,000

LOT B

Lot Dimensions	Unit		Unit Value		Depth Factor		Triangle Factor		Lot Value
(1) 50' X 100'	50'	X	($200	X	1.00	X	0.65)	=	$ 6,500
(2) 40' X 90'	40'	X	($200	X	0.96		NA)	=	$ 7,680
(3) 20' X 85'	20'	X	($200	X	0.94		NA)	=	$ 3,760
(4) 35' X 95'	35'	X	($200	X	0.98	X	0.35)	=	$ 2,400
					LOT B TOTAL VALUE:				$20,340

EXAMPLE 9 Curved Lot with Shape Factors.



To find the value of a curved lot, rectify the curvature and reduce the lot to its nearest equivalent lot shape. Then compute according to the applicable rules.

CALCULATIONS:

LOT A

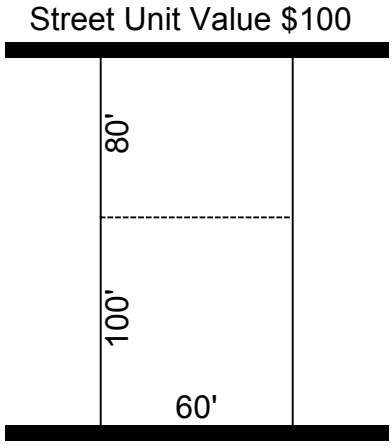
Lot Dimensions	Unit		Unit Value		Depth Factor		Triangle Factor		Lot Value
(1) 50' X 103'	50'	X	($200	X	1.01		NA)	=	$10,100
(2) 60' X 103'	60'	X	($200	X	1.01	X	0.65)	=	$ 7,880
					LOT A TOTAL VALUE:				$17,980

EXAMPLE 9 Curved Lot with Shape Factors (continued).

CALCULATIONS:
LOT B

Lot Dimensions	Unit		Unit Value		Depth Factor		Lot Value
50' X 100'	50'	X	($200	X	1.00)	=	$10,000

EXAMPLE 10 Commercial Lot - Front Foot Value with Depth and Two Street Frontage Factors.

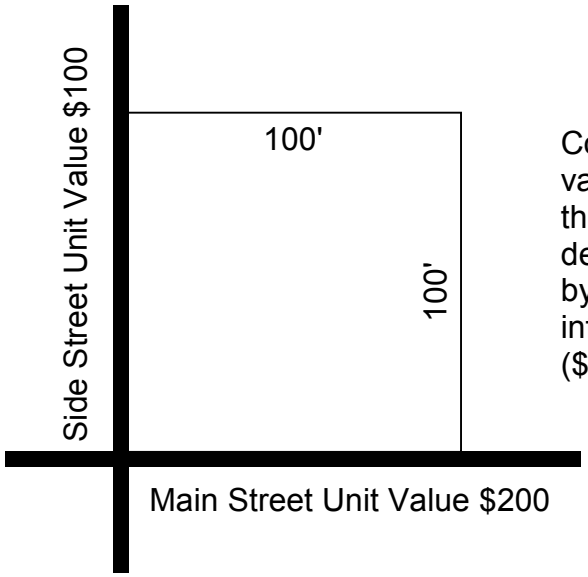


To find the value of a through lot with two street fronts, compute from the high-value street to the standard depth or from half the depth, whichever is greater, and from the low-side street for the remaining depth, and add together for the total value.

CALCULATIONS:

Lot Dimensions	Unit		Unit Value		Depth Factor		Lot Value
60' X 180'							
High-Street Value							
60' X 100'	60'	X	($200	X	1.00)	=	$12,000
Low-Street Value							
60' X 80'	60'	X	($100	X	0.91)	=	$ 5,460
					TOTAL LOT VALUE:		$17,460

EXAMPLE 11 Commercial Corner Lot - Front Foot Value with Depth and Street Frontage Factors. (Corner influence applicable to entire frontage).



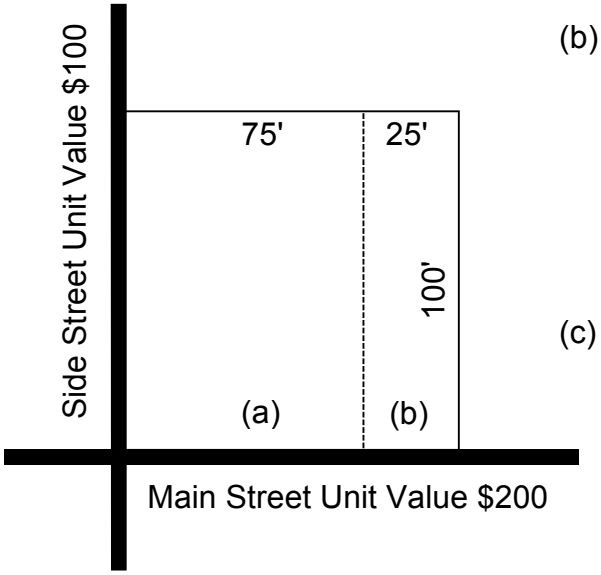
Compute the frontage 100', on the high unit value street to the depth of the lot on the basis of the unit front foot value of $220. This figure was derived by multiplying the high unit value ($200) by the increase contributed to the corner influence (10%) and adding it to the unit value ($200 X 10% = $20 + $200 = $220).

In this hypothetical example the corner influence contributes 0.10 in additional land value. However, an analysis of local market data of similar properties should be used to determine the corner influence factor most appropriate.

CALCULATIONS:

Lot Dimensions	Unit	Unit Value		Depth Factor		Lot Value
100' X 100'	100'	($220	X	1.00)	=	$22,000

EXAMPLE 12 Commercial Corner Lot - Front Foot Value with Depth and Street Frontage Factors. (Corner influence applicable to portion of frontage).



(b) Compute the frontage 75', on the high unit value street to the depth of the lot on the basis of the unit front foot value of $260. This figure was derived by multiplying the high unit value ($200) by the increase contributed to the corner influence (30%) and adding it to the unit value ($200 X 30% = $60 + $200 = $260).

(c) Compute the remainder of the frontage on the high unit value street to the depth of the lot on the basis of the unit front foot value of the street.

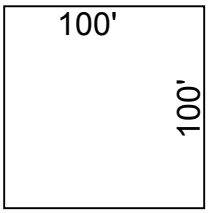
In this hypothetical example the corner influence contributes 0.30 in additional land value. However, an analysis of local market data of similar properties should be used to determine the corner influence factor most appropriate.

CALCULATIONS:

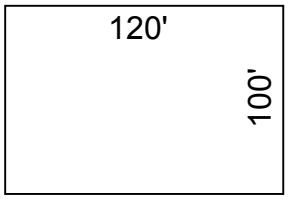
Lot Dimensions	Unit		Unit Value		Depth Factor		Lot Value
(a) 75' X 100'	75'		($260	X	1.00)	=	$19,500
(b) 25' X 100'	25'	X	($200	X	1.00)	=	$ 5,000
					TOTAL LAND VALUE:		$24,500

SQUARE FOOT CALCULATIONS

EXAMPLE 1 Square and Rectangular Lots - Multiply length of the lot times width of the lot.

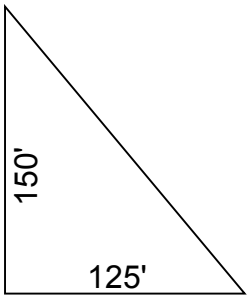


100' X 100' = **10,000 Square Feet**



100' X 120' = **12,000 Square Feet**

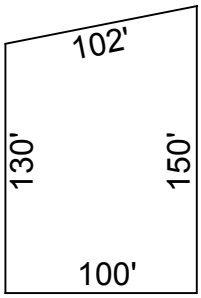
EXAMPLE 2 Triangular Shaped Lots



Base times height divided by 2

$$\frac{150' \text{ X } 125'}{2}$$ **= 9,375 Square Feet**

EXAMPLE 3 Irregular Lots - If irregularity is minimal, use averages.

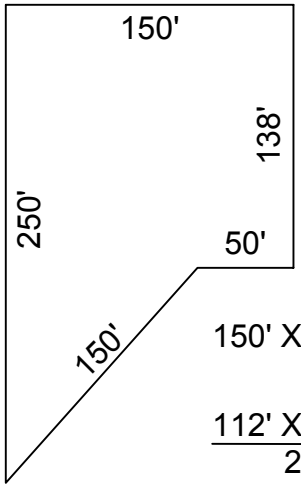


Determine average depth:

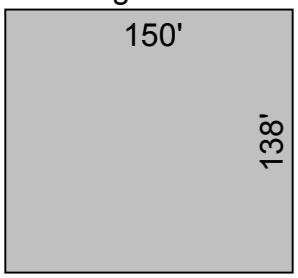
$$\frac{130' + 150'}{2} = 140'.$$

Multiply average depth by the width:
140' X 100' = **14,000 Square Feet.**

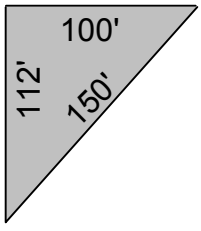
If irregularity is complex use a planimeter, or divide into two or more segments to determine the area.



Segment 1



Segment 2



150' X 138' = 20,700 Square Feet

+

$\frac{112' \text{ X } 100'}{2}$ = 5,600 Square Feet

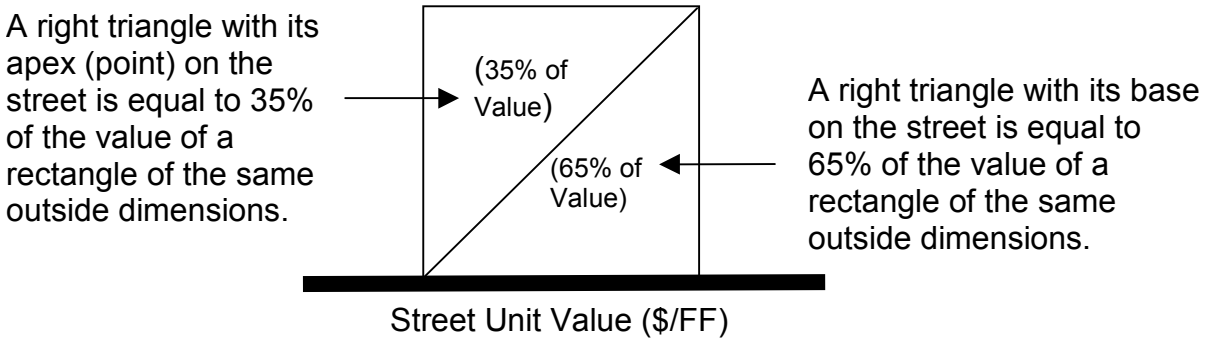
26,300 Square Feet

RULES

65/35 Rule For Triangular Lots

65/35 Rule

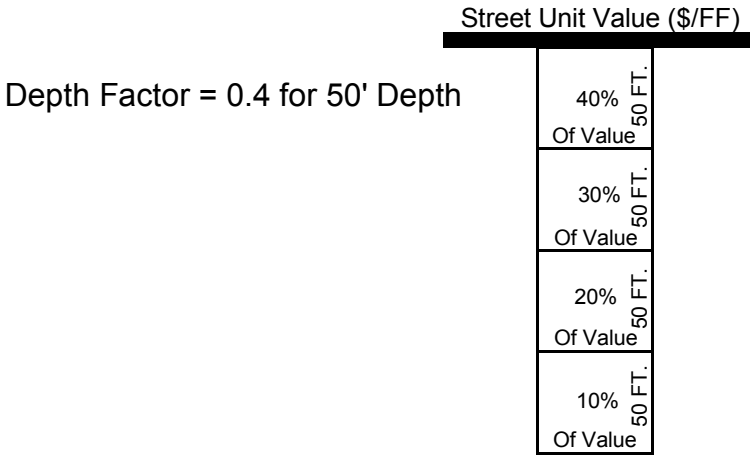
This rule is based on the premise that a right-angle, triangular-shaped lot with its base on a street contains 65 percent of the value of a rectangular lot of the same outside dimensions, and that a right-angle, triangular-shaped lot with its apex (point) on a street contains 35 percent of the value of a rectangular lot.



Rule For Depth Factor Table

4-3-2-1 Rule

One of the oldest depth curves in use is based on what is known as the 4-3-2-1 rule. This rule states that the front quarter of a parcel is worth 40% of the whole value, the second quarter 30%, the third quarter 20%, and the rear quarter 10%.



DEPTH FACTOR TABLE
(based on 100' standard depth)

Lot Depth	Depth Factor	Lot Depth	Depth Factor
5'	0.15	120'	1.06
10'	0.25	125'	1.08
15'	0.35	130'	1.09
20'	0.43	135'	1.10
25'	0.50	140'	1.12
30'	0.55	145'	1.13
35'	0.60	150'	1.14
40'	0.65	155'	1.15
45'	0.69	160'	1.16
50'	0.73	165'	1.17
55'	0.77	170'	1.18
60'	0.80	175'	1.18
65'	0.83	180'	1.19
70'	0.86	185'	1.20
75'	0.89	190'	1.20
80'	0.91	195'	1.21
85'	0.94	200'	1.21
90'	0.96	210'	1.21
95'	0.98	220'	1.22
100'	1.00	230'	1.22
105'	1.01	240'	1.23
110'	1.03	250'	1.23
115'	1.04	300'	1.26

NOTE: These depth factors are hypothetical. Actual depth factors should be developed to reflect local market conditions.

DEPTH FACTOR CONVERSION

The depth factors shown in the preceding Depth Factor Table are based on a standard depth of 100'. In cases where the standard lot depth is not 100', conversion of the factors in the Depth Factor Table will be required. The revised depth factors can be mathematically derived by multiplying the existing depth factors by a conversion factor.

Conversion Procedure

1. Establish the typical lot depth of the subject area.
2. Divide the standard depth factor of 1.00 for a 100' lot by the depth factor for the new standard lot depth. Both of these factors are taken from the Standard Depth Factor Table based on a 100' standard lot depth. The result is a conversion factor to be applied to each existing depth factor to calculate the new depth factors.

Example

It may be necessary to convert the 100' standard lot to a 150' standard lot. As shown in the 100' Standard Depth Factor Table the factor for a 150' depth lot is 1.14.
Divide this factor into all the other factors given in the table for each depth conversion. This results in a new factor of 150' standard depth for each lot depth.

Calculations for a lot with 125' depth in an area of 150' standard depth lots:

$$\frac{\text{Standard Depth Factor } \mathbf{1.00}}{\text{150' Lot Depth Factor } \mathbf{1.14}} = \mathbf{0.877}.$$

Note: Standard Depth Factor for a 125' Lot Depth = 1.08.

New Standard Depth Factor 0.877 X Depth Factor 1.08 = 0.95

The above procedure is the suggested process for converting the Standard Depth Table in this manual to any standard depth factor. The factors should be rounded to the 2nd decimal place.

Caution must be given when applying the depth factors. The Standard Depth Factor Table and the conversion process should be considered a guide, and should be supported by evidence from the local market before being applied.